



UIC MEANS GROUND WATER PROTECTION

The Safe Drinking Water Act and The Underground Injection Control Program

The Safe Drinking Water Act (SDWA) recognizes the need to protect current and possible future sources of water which serve as public drinking water supplies. Public water supply sources occur as both surface water and ground water. Most public water supplies in the United States rely on ground water for at least a portion of their water source. Individual private drinking water supplies are almost exclusively ground water-dependent. Due to the complex nature of ground water, including the vulnerability of underground sources of drinking water (USDWs) to contamination from shallow injection wells and the high costs and technological difficulties of ground water cleanup, the SDWA advocates the prevention of contamination as the only feasible means of adequately protecting USDWs.

Injection wells are regulated by EPA and delegated state agencies under the authority of the Underground Injection Control (UIC) program, as provided for by Part C of the SDWA. The purpose of the UIC program is to minimize threats to USDWs through proper management of injection wells. The UIC program prohibits the subsurface emplacement of fluids through injection wells if those fluids contain contaminants which pose the potential to endanger USDWs. Shallow injection wells, wells which are typically designed to inject directly into or above USDWs, are also known as Class V wells.

Shallow Injection Wells

The variety of fluids discharged to the subsurface through shallow injection wells is numerous. Wells which are used for the disposal of waste fluids generated by industrial or commercial facilities are classified as industrial waste discharge wells, and are generally considered higher risk than other types of shallow injection wells. However, other shallow injection wells can also pose a risk to USDWs if not properly designed, sited, constructed, operated, or maintained. Shallow injection wells are commonly used when an alternative means of waste disposal is not available such as discharge to a sewage treatment plant or a permitted discharge to a nearby surface water body .

Shallow injection wells are common and occur in many geographic areas and are utilized for many different purposes. These wells vary significantly in their construction & the chemical nature of the fluids injected.

EPA discourages the discharge of anything other than solely sanitary, domestic waste into septic systems. Septic systems do not adequately treat most industrial wastes. If a settling tank and leach field is used to discharge industrial or other commercial wastes it is no longer considered a septic system and is subject to the requirements applicable to industrial waste discharge wells.

Settling tanks and leach fields, cesspools, dry wells, seepage pits, and infiltration galleries all discharge or inject fluids into the subsurface and are therefore shallow injection wells. Shallow injection wells are used for many purposes, including industrial waste disposal, storm water drainage in urban, industrial or agricultural areas, fluid return for ground water heat pumps or air conditioners, mine backfill, or beneficial uses such as for contaminated ground water remediation or aquifer recharge.

Shallow injection wells may be difficult to identify due to the generally “low-tech” nature of their construction and operation. The basic standards of shallow injection well construction require little and often no maintenance. The term “injection” may be a misnomer in that shallow injection wells often discharge fluids under the influence of gravity only. For these reasons, the discharge of fluids to a shallow injection well may not be an obvious part of the operation of a facility, so discharge may continue unnoticed. For example, service bay floor drains at a car dealership which are connected to a settling tank or dry well may appear fairly innocuous. However, they are subject to spills and likely receive floor wash water containing residual oil, grease, solvents, and antifreeze which could pose a significant threat to USDWs.